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Record #	ABU	Unit	I/R	Item Nbr	Additional Consideration (Recommendation)	ABU Proposal	Resolution	Verifier Comments	Verifier Name	Verified On	Due Date	RR	SOE	Assigned To	Status
17278	D&R	#5 Rheniformer	2011	1.3.1.1	2. The team discussed the issue of H2 back flow resulting in potential overpressure of the #5 Rheniformer feed system and feed tank leading to possible fire and personnel exposure/injury. Consider review and/or change to chopper valve 38FV055 time delay with respect to best practices. Current valve delay is 10 seconds total compared with best practice recommendation to be fully chopped in less than 4 seconds.	Consider review and/or change to chopper valve 38FV055 time delay with respect to best practices. Current valve delay is 10 seconds total compared with best practice recommendation to be fully chopped in less than 4 seconds.	Work with controls to revise the delay time to prevent H2 back flow. MOC is needed. Expected completion 3/15/12. Reassigned from Kimia Mondfrans to Eric Topham on 1/17/12 by Mark Crow. Completed by Dave Davis 4/24/12. MOC #24890 signed off through Stage 3. ETOP 4/24/12	MOC complete. Chopper timing per reco.	Peterson, Paul M.	6/11/2012	6/16/2012	7	S	Topham, Eric	Completed

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Record #	ABU	Unit	I/R	Item Nbr	Additional Consideration (Recommendation)	ABU Proposal	Resolution	Verifier Comments	Verifier Name	Verified On	Due Date	RR	SOE	Assigned To	Status
17328	D&R	#5 Rheniformer	2011	7.1.8.1	3. Team discussed deadleg on hydrogen line [line 5P5129-6", iso 0952-001-011; D-303315] upstream of 38FV041 when V-541 is not being regenerated. Presence of water & chlorides in the H2 could lead to increased corrosion, loss of hydrogen containment, fire, explosion and personnel injury. Review inspection frequency in light of regeneration frequency and consider increased inspection.	Operations and Inspections will review deadleg and determine appropriate course of action.	Add this deadleg to inspection list to identify/monitor possible localized corrosion. Projected completion 12/31/2011. Once this has been added to the inspection list, this PHA recommendation will be considered closed. Additional follow-up with this piping, if deemed appropriate, will depend on inspection results and will be managed through existing inspection and maintenance programs. Reassigned to Dave Dail on 9/26/11. Status 2/9/2012 from Mark Crow (mxew) per email from Dave Dail: Operations and Inspections have reviewed dead leg and determine appropriate course of action. 1) 0952-001-011 This line is currently used by operations and valves may be closed to create a dead leg. Corrosion monitoring locations (CML) have been established to monitor for corrosion when valves are closed or open. 2) Corrosion monitoring locations (CML) have been established to acquire data to calculate corrosion rates at the stagnant end and the connection to the active end of this piping circuit. This piping circuit is inspected per API 570 Piping Inspection Code and Richmond Refinery Piping Inspection Guidelines. There are no corrosion issues at this time. Inspections will to continued	CML points are active per meridium.	Peterson, Paul M.	4/20/2012	6/16/2012	6	S	Dail, David	Completed

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							to monitor piping for corrosion on the OSI (On stream Inspection) program. CMLs Corrosion monitoring locations have been assigned where needed per API 570 Piping Inspection Code and Richmond Refinery Piping Inspection Guidelines. Supporting documentation for this action item has been filed at O:\Psm\Mod-only\PHAfiles\PHA-COR ISO Recommendation Supporting Documents\PHA Database\17328 4/18/2012 Record Number 17328 3. Team discussed dead leg on hydrogen line [line 5P5129-6"; isometric drawing 0952-001-011; D-303315] upstream of 38FV041 when V-541 is not being regenerated. Presence of water & chlorides in the H2 could lead to increased corrosion, loss of hydrogen containment, fire, explosion and personnel injury. Review inspection frequency in light of regeneration frequency and consider increased inspection. Add this dead leg to inspection list to identify/monitor possible localized corrosion. Once this has been added to the inspection list, this PHA recommendation will be considered closed. Additional follow-up with this piping, if deemed appropriate, will depend on inspection results and will be managed through existing inspection and maintenance programs. Reassigned to Dave Dail on 9/26/11.								

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							Operations and Inspections have reviewed dead leg and determine appropriate course of action. 1)3952-001-011 This line is currently used by operations and valves may be closed to create a dead leg. Corrosion monitoring locations (CML) have been established to monitor for corrosion when valves are closed or open. 2)Corrosion monitoring locations (CML) have been established to acquire data to calculate corrosion rates at the stagnant end and the connection to the active end of this piping circuit. This piping circuit is inspected per API 570 Piping Inspection Code and Richmond Refinery Piping Inspection Guidelines. There are no corrosion issues at this time. Inspection Recommendation 3)Recommend to continued to monitor piping for corrosion on the OSI (On stream Inspection) program. CMLs Corrosion monitoring locations have been assigned where needed per API 570 Piping Inspection Code and Richmond Refinery Piping Inspection Guidelines. 4)With the approval of Operations management for continued monitoring through the OSI program please close PHA record number 17328.								

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Record #	ABU	Unit	I/R	Item Nbr	Additional Consideration (Recommendation)	ABU Proposal	Resolution	Verifier Comments	Verifier Name	Verified On	Due Date	RR	SOE	Assigned To	Status
17329	D&R	#5 Rheniformer	2011	7.1.8.1	4. Team discussed use of fresh hydrogen to remove moisture from dryer system following #5 Rheniformer catalyst regeneration. The #5 Rheniformer Regeneration procedure does not specify when this should take place, If dryout is delayed, higher moisture in the system may increase corrosion, leading to release of hydrogen potential explosion. Consider modifying #5 Rheniformer Regeneration procedure to include note to dry this system immediately after plant dryout.	Consider modifying #5 Rheniformer Regeneration procedure to include note to dry this system immediately after plant dryout.	Plan to revise Regen procedure prior to the April '12 5 Rhen Regen. 4 and 5 Rhen Regen procedures will be combined at the same time. Reassigned from Kimia Mondfrans to Eric Topham on 1/17/12 by Mark Crow. Step 20 of the Hydrogen Start Up in the 5 Rhen Regen procedure refers to the Shutdown of V-541 Recycle Drier (5RH-NP-3015). 5RH-NP-3015 specifies to Regenerate the H2 Drier after removing from service. This existing safeguard satisfies the PHA action item. ETOP 6/11/12	Regen procedure calls for a drier regen per the drier regen procedure. Additionally on stream inspection would detect hi corrosion rates on this piping. No reports of hi corrosion so the procedure is working.	Peterson, Paul M.	6/11/2012	6/16/2012	6	S	Topham, Eric	Completed

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Record #	ABU	Unit	I/R	Item Nbr	Additional Consideration (Recommendation)	ABU Proposal	Resolution	Verifier Comments	Verifier Name	Verified On	Due Date	RR	SOE	Assigned To	Status
17330	D&R	#5 Rheniformer	2011	9.1.3.1	5. The team discussed manual operation of 38PV518 and potential for pressure surge in the event of export H2 mis-manifolding; potential K-550 compressor surging, potential damage, release to ATM, fire, explosion and personnel injury. Consider adding high pressure alarm to 38PC518.	Review scenario to determine necessity of adding alarm, and add alarm if appropriate. Resolution must consider scenarios 9.1.3.1 and 9.4.4.1	A review team met to review the #4 and #5 Rheniformer PHA recommendations involving alarms to align the recommendations with Chevron AOA targets and develop an action plan for each recommendation. The meeting took place on July 14, 2011 in the Refinery Conference Center, Room 3. Review Team: Stan Crowe, Ike Bullock, Paul Peterson Facilitators: Mark Crow & Cecily Storey Review team noted that additional alarms would activate at K-900 to alert operations of a H2 mis-manifolding. The team determined that the current risk ranking is acceptable and existing safeguards, with K-900 alarms, are adequate. No further follow-up necessary.	I support the resolution.	Peterson, Paul M.	4/20/2012	6/16/2012	6	S	Peterson, Paul M.	Completed
17331	D&R	#5 Rheniformer	2011	24.18.1.1	1. Issue discussed was identification of minor errors on P&IDs. Consider updating P&IDs per PHA redlines. Non-Risk Ranked Actionable Item required to meet regulatory/statutory requirements and/or to be consistent with Chevron's guiding principles.	Consider updating P&IDs per PHA redlines. Non-Risk Ranked Actionable Item required to meet regulatory/statutory requirements and/or to be consistent with Chevron's guiding principles.	9/29/11 ~ P&ID update mark-ups are in progress and are about 60% complete. Completion of mark-ups will likely no occure until the end of the year, due to the Major Shutdown. Reassigned from Kurt Gish to Alison Raiford on 5/24/12 by Mark Crow. The P&IDs have been updated per the PHA markups via MOC #25072 (6/13/12, Alison Raiford)	MOC25072 through to stage 3. PID's updates will be needed in the future as other changes and new information comes in. All known issues have been updated.	Peterson, Paul M.	6/14/2012	6/16/2012			Raiford, Alison L.	Completed

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Record #	ABU	Unit	I/R	Item Nbr	Additional Consideration (Recommendation)	ABU Proposal	Resolution	Verifier Comments	Verifier Name	Verified On	Due Date	RR	SOE	Assigned To	Status
17332	D&R	#5 Rheniformer	2011	9.13.2.1	6. Team identified deadleg at H2 export 6" jumpover line (iso 0952-002-009) between #5 CAT to Isomax (line 5P87) and from Isomax to V-912A (line 9P33) [D-312388]. Potential increased corrosion, possible release of H2 to ATM, fire, explosion, personnel injury. Consider either removing this line from the plant, air-gapping the line or ensuring that the line is inspected at an appropriate frequency and update the P&ID as needed.	Operations and Inspections will review deadleg and determine appropriate course of action.	Add this deadleg to inspection list to identify/monitor possible localized corrosion. Projected completion 12/31/2011. Once this has been added to the inspection list, this PHA recommendation will be considered closed. Additional follow-up with this piping, if deemed appropriate, will depend on inspection results and will be managed through existing inspection and maintenance programs. Reassigned to Dave Dail on 9/26/11. Operations and Inspections reviewed dead leg and determine appropriate course of action. 1)3952-002-009 Corrosion monitoring locations (CML) have been established to acquire data to calculate corrosion rates at the stagnant end and the connection to the active end of this piping circuit. This piping circuit is inspected per API 570 Piping Inspection Code and Richmond Refinery Piping Inspection Guidelines. Review of these piping circuits revealed No corrosion issues exist at this time. Inspection Recommends we continue to monitor these piping circuits on the on stream inspection program (OSI).	Piping is on the inspection list and will be inspected on a frequency established by inspections.	Peterson, Paul M.	6/1/2012	6/16/2012	8	S	Dail, David	Completed

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Record #	ABU	Unit	I/R	Item Nbr	Additional Consideration (Recommendation)	ABU Proposal	Resolution	Verifier Comments	Verifier Name	Verified On	Due Date	RR	SOE	Assigned To	Status
17333	D&R	#5 Rheniformer	2011	11.4.5.1	7. Potential mis-manifold of #5 Rheniformer reformate to off-test instead of tankage, re-processing of reformate, LPO. [line 5P60-8" and downstream branches, D-312388] Consider job-aide with drawing and/or additional training.	Declined. Not a safety issue. This asset item will be managed as a regular business item.					6/16/2012	7	A	Peterson, Paul M.	Declined

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Record #	ABU	Unit	I/R	Item Nbr	Additional Consideration (Recommendation)	ABU Proposal	Resolution	Verifier Comments	Verifier Name	Verified On	Due Date	RR	SOE	Assigned To	Status
17334	D&R	#5 Rheniformer	2011	12.1.1.1	8. The PSV-091 set pressure (220psig) is higher than V-590 design pressure (208psig) [D-312374, D-312376]. Potential overpressure of V-590, release of light hydrocarbon to ATM, fire, explosion, personnel injury. Consider review of PSV-091 set point or re-rate V-590.	Consider review of PSV-091 set point or re-rate V-590. Reassigned from Kurt Gish to Alison Raiford on 5/24/12 by Mark Crow.	9/29/11 ~ PSV-091 (C4-25) has been reviewed and field verified that it is set at 208 PSI. Review of documentation shows that the change from 220 PSI set to a setting of 208 was completed in May of 2005. Verification of the PSV setting was performed by David Dail and was documented in an email sent by Ned Muha on 9/12/11. Below is an except from the email: PHA Record #17334 (#5 Rhen) 8. The PSV-091 (C4-21) set pressure (220psig) is higher than V-590 design pressure (208psig) [D-312374, D-312376]. Potential overpressure of V-590, release of light hydrocarbon to ATM, fire, explosion, personnel injury. Consider review of PSV-091 set point or re-rate V-590. Resolution: David Dail from Inspection performed a field walk and found that the set pressure of PSV-091 has already been reset to 208 psig. The 705A and the SIS sheets need to be updated. The last statement regarding the 705A form and the SIS sheets have been investigated and both indicate that the set pressure for C4-25 is 208 PSI. Reassigned from Kurt Gish to Alison Raiford on 5/24/12 by Mark Crow. The P&ID has been updated to show a 208 PSI set pressure for PSV-091 via MOC #25072. (6/13/12, Alison Raiford)	PRD is reset and PID is updated.	Peterson, Paul M.	6/14/2012	6/16/2012	6	S	Raiford, Alison L.	Completed

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Record #	ABU	Unit	I/R	Item Nbr	Additional Consideration (Recommendation)	ABU Proposal	Resolution	Verifier Comments	Verifier Name	Verified On	Due Date	RR	SOE	Assigned To	Status
17335	D&R	#5 Rheniformer	2011	12.13.2.1	9. Deadleg identified on OOS PSV-599 (PSV relieves to ATM) on stripper C-590 [D-312374]. Potential increased corrosion and LPG release to ATM, fire, explosion, personnel injury. Consider either removing this line & PSV from the plant, air-gapping the line or ensuring that the line is inspected at an appropriate frequency and update the P&ID as needed.	Operations and Inspections will review deadleg and determine appropriate course of action.	PSV is blinded and out of service, does not release to atmosphere. Add this deadleg to inspection list to identify/monitor possible localized corrosion. Projected completion 12/31/2011. Once this has been added to the inspection list, this PHA recommendation will be considered closed. Additional follow-up with this piping, if deemed appropriate, will depend on inspection results and will be managed through existing inspection and maintenance programs. Reassigned to Dave Dail on 9/26/11. 4/18/2012 Record Number 17335 9. Dead leg identified on OOS PSV-599 (PSV relieves to ATM) on stripper C-590 [D-312374]. Potential increased corrosion and LPG release to ATM, fire, explosion, personnel injury. Consider either removing this line & PSV from the plant, air-gapping the line or ensuring that the line is inspected at an appropriate frequency and update the P&ID as needed PSV is blinded and out of service, does not release to atmosphere. Add this dead leg to inspection list to identify/monitor possible localized corrosion. Projected completion 12/31/2011. Once this has been added to the inspection list, this PHA recommendation will be considered closed. Additional follow-up with this piping, if deemed appropriate, will depend on inspection results	CML points are active	Peterson, Paul M.	4/20/2012	6/16/2012	7	S	Dail, David	Completed

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							and will be managed through existing inspection and maintenance programs. Re-assigned to Dave Dail on 9/26/11. Operations and Inspections have reviewed dead leg and determine appropriate course of action. 1)0952-002-007 and 0952-004-010. This line is currently used by operations and valves may be closed to create a dead leg. Corrosion monitoring locations (CML) have been established to monitor for corrosion when valves are closed or open. 2)Corrosion monitoring locations (CML) have been established to acquire data to calculate corrosion rates at the stagnant end and the connection to the active end of this piping circuit. This piping circuit is inspected per API 570 Piping Inspection Code and Richmond Refinery Piping Inspection Guidelines. There are no corrosion issues at this time. Inspection Recommendation 3)Recommend to continued to monitor piping for corrosion on the OSI (On stream Inspection) program. CMLs Corrosion monitoring locations have been assigned where needed per API 570 Piping Inspection Code and Richmond Refinery Piping Inspection Guidelines. 4)With the approval of Operations management for continued monitoring through the OSI program please close PHA record number 17335.								

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Record #	ABU	Unit	I/R	Item Nbr	Additional Consideration (Recommendation)	ABU Proposal	Resolution	Verifier Comments	Verifier Name	Verified On	Due Date	RR	SOE	Assigned To	Status
17336	D&R	#5 Rheniformer	2011	13.2.1.1	10. The team discussed lack of redundant level alarms on V-590. If 38LT092 fails there is no alarm to directly alert operators to high or low level in V-590. Potential pump cavitation, release of LPG, fire, explosion, personnel injury. P&ID shows a redundant LT (separate bridle) that is not being used. Consider adding high & low level indication and alarms to redundant transmitter.	Review scenario to determine necessity of adding alarm, and add alarm if appropriate. Resolution must consider 13.1.2.2 and 13.2.1.1	A review team met to review the #4 and #5 Rheniformer PHA recommendations involving alarms to align the recommendations with Chevron AOA targets and develop an action plan for each recommendation. The meeting took place on July 14, 2011 in the Refinery Conference Center, Room 3. Review Team: Stan Crowe, Ike Bullock, Paul Peterson Facilitators: Mark Crow & Cecily Storey Review team determined that the current risk ranking is acceptable and existing safeguards are adequate. No further follow-up necessary.	Current protection is adequate.	Peterson, Paul M.	1/10/2012	6/16/2012	6	S	Peterson, Paul M.	Completed

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Record #	ABU	Unit	I/R	Item Nbr	Additional Consideration (Recommendation)	ABU Proposal	Resolution	Verifier Comments	Verifier Name	Verified On	Due Date	RR	SOE	Assigned To	Status
17337	D&R	#5 Rheniformer	2011	13.4.1.1	11. The team identified deadleg on LPG export line from V-590 connection at plot limit to old 3 CAT [line # 33P522-2", D-312388]. If normally closed 3" orbit valve leaks by or is opened potential increased corrosion in off-plot dead leg due to chlorides in LPG, potential increased corrosion, LPG release, vapor cloud, fire, explosion and personnel exposure. Verify condition of line (cleaned out?), consider either removing this line from the plant, air-gapping the line or ensuring that the line is inspected at an appropriate frequency and update the P&ID as needed.	Operations and Inspections will review deadleg and determine appropriate course of action.	Add this deadleg to inspection list to identify/monitor possible localized corrosion. Projected completion 12/31/2011. Once this has been added to the inspection list, this PHA recommendation will be considered closed. Additional follow-up with this piping, if deemed appropriate, will depend on inspection results and will be managed through existing inspection and maintenance programs. Reassigned to Dave Dail on 9/26/11. 4/18/2012 Record Number 17337 11. The team identified dead leg on LPG export line from V-590 connection at plot limit to old 3 CAT [line # 33P522-2", D-312388]. If normally closed 3" orbit valve leaks by or is opened potential increased corrosion in off-plot dead leg due to chlorides in LPG, potential increased corrosion, LPG release, vapor cloud, fire, explosion and personnel exposure. Verify condition of line (cleaned out?), consider either removing this line from the plant, air-gapping the line or ensuring that the line is inspected at an appropriate frequency and update the P&ID as needed. Add this dead leg to inspection list to identify/monitor possible localized corrosion. Projected completion 12/31/2011. Once this has been added to the inspection list, this PHA recommendation will be considered closed. Additional	CML points are active per meridium.	Peterson, Paul M.	4/20/2012	6/16/2012	6	S	Dail, David	Completed

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							follow-up with this piping, if deemed appropriate, will depend on inspection results and will be managed through existing inspection and maintenance programs. Reassigned to Dave Dail on 9/26/11. Operations and Inspections have reviewed dead leg and determine appropriate course of action. 1)☑0952-005-007, 0952-005-008, 0952-002-004, and 0952-002-009. These line is currently used by operations and valves may be closed to create a dead leg. Corrosion monitoring locations (CML) have been established to monitor for corrosion when valves are closed or open. 2)☑Corrosion monitoring locations (CML) have been established to acquire data to calculate corrosion rates at the stagnant end and the connection to the active end of this piping circuit. This piping circuit is inspected per API 570 Piping Inspection Code and Richmond Refinery Piping Inspection Guidelines. There are no corrosion issues at this time. Inspection Recommendation 3)☑Recommend to continued to monitor piping for corrosion on the OSI (On stream Inspection) program. CMLs Corrosion monitoring locations have been assigned where needed per API 570 Piping Inspection Code and Richmond Refinery Piping Inspection Guidelines. 4)☑With the approval of Operations management for continued monitoring through								

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							the OSI program please close PHA record number 17337.								
17338	D&R	#5 Rheniformer	2011	13.4.2.1	12. The team identified deadleg on LPG export line from V-590 connection at plot limit to old GRUB [D-312388]. If normally closed 2" orbit valve is opened or leaks by, potential increased corrosion, fire, explosion, personnel injury. Consider either removing this line from the plant, air-gapping the line or ensuring that the line is inspected at an appropriate frequency and update the P&ID as needed.	Operations and Inspections will review deadleg and determine appropriate course of action.	Add this deadleg to inspection list to identify/monitor possible localized corrosion. Projected completion 12/31/2011. Once this has been added to the inspection list, this PHA recommendation will be considered closed. Additional follow-up with this piping, if deemed appropriate, will depend on inspection results and will be managed through existing inspection and maintenance programs. Reassigned to Dave Dail on 9/26/11. Operations and Inspections reviewed dead leg and determine appropriate course of action. 1)3952-005-007 Corrosion monitoring locations (CML) have been established to acquire data to calculate corrosion rates at the stagnant end and the connection to the active end of this piping circuit. This piping circuit is inspected per API 570 Piping Inspection Code and Richmond Refinery Piping Inspection Guidelines. Review of these piping circuits revealed No corrosion issues exist at this time. Inspection Recommends we continue to monitor these piping circuits on the on stream inspection program (OSI).	Piping is on the inspection list and will be inspected on a frequency established by inspections.	Peterson, Paul M.	6/1/2012	6/16/2012	6	S	Dail, David	Completed

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17339	D&R	#5 Rheniformer	2011	13.4.5.1	13. The team identified potential unused sample station piping susceptible to increased corrosion leading to potential release of LPG. Sample Station at 38FV091 [D-312374]. Possible release of LPG, fire, explosion, personnel injury. If the sample station will no longer be used consider either removing this sample station & connections from the plant, air-gapping or ensuring that the lines are inspected at an appropriate frequency and update the P&ID as needed.	Operations and Inspections will review deadleg and determine appropriate course of action.	Dave Curry will evaluate the need for sample station and consider plan for removal if not needed. Decision for continued use of sample station by 12/31/2011. PMPE 4/20/12 - MOC 11252 is complete through stage 1. The special sample station, built per Rick's drawings, is tagged out of service to prevent operation since the PSSR is not complete. Work to remove the hardware is being planned and scheduled. Completing the sample station removal is being tracked through the MOC overdue process via OERI. Current "overdue" date is 7/30/12. Since this system was not commisioned, but built per DED spec, is currently LOTO to prevent use and it's status is being tracked through another PSM system (MOC and OERI) the A/C is considered resolved.	Tracking removal of this sample piping via MOC and OERI.	Peterson, Paul M.	4/20/2012	6/16/2012	7	S	Curry, David P.	Completed
17340	D&R	#5 Rheniformer	2011	14.15.1.1	14. The team discussed the procedure involved with charging the PERC pot, V-591. If level is lost in V-591 prior to filling the pot with PERC and is charged with PERC first, there is a possibility of undiluted PERC routed to Reactors. Results is increased reactor activity, reduced reformate yield, increased light ends yield, LPO. Consider update to V-591 charge job aid (5RHK01J) to include statement if in the event of loss of level of V-591, establish a level with Reformate prior to adding PERC. [Note that #4 Rhen is a procedure 4RH-NP-5021]	Declined. Not a safety issue. This asset item will be managed as a regular business item.					6/16/2012	8	A	Peterson, Paul M.	Declined

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17341	D&R	#5 Rheniformer	2011	16.1.3.2	15. Team discussed lead time in obtaining new machine rotors. The refinery does not have a spare turbine rotor for TK-550 and estimates ~6-12 months for delivery. If the rotor in TK-550 is damaged, the hydrogen compressor (and hence the #5 Rheniformer plant) could be down for the duration resulting in a LPO with severity of at least 3. Consider obtaining a spare rotor for TK-550 to keep onsite at Hickham (Houston, TX) with other shared spare rotors.	Declined. Not a safety issue. This asset item will be managed as a regular business item.					6/16/2012	6	A	Peterson, Paul M.	Declined
17342	D&R	#5 Rheniformer	2011	17.2.2.1	16. The team identified lack of indication if 38PCV559 [D-340452], fuel gas min flow bypass valve, opens when it should be closed. If the valve opens when it should be closed, increased fuel gas will be routed to the furnaces with potential burner flame out due to higher pressure, leading to possible uncontrolled ignition of gasses in burner box, personnel injury. Consider adding open/close field indication or DCS indication to alert operations that the valve has opened.	Review scenario to determine necessity of adding alarm, and add alarm if appropriate.	A review team met to review the #4 and #5 Rheniformer PHA recommendations involving alarms to align the recommendations with Chevron AOA targets and develop an action plan for each recommendation. The meeting took place on July 14, 2011 in the Refinery Conference Center, Room 3. Review Team: Stan Crowe, Ike Bullock, Paul Peterson Facilitators: Mark Crow & Cecily Storey Review team determined that the current risk ranking is acceptable and existing safeguards are adequate. No further follow-up necessary.	I support the current alarm strategy.	Peterson, Paul M.	4/20/2012	6/16/2012	7	S	Peterson, Paul M.	Completed

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17343	D&R	#5 Rheniformer	2011	17.12.1.1	17. The team discussed past start-up issues with unclear #5 Rheniformer furnace (F-550/60/70/80) start-up graphics. There is difficulty aligning FSC permissive for fuel gas flow at furnace start-up due to unclear start-up graphics and has resulted in delayed start-up. Consider additional guidance or training or modify start-up graphics to minimize start-up delay.	Declined. Not a safety issue. This asset item will be managed as a regular business item.					6/16/2012	6	A	Peterson, Paul M.	Declined
17344	D&R	#5 Rheniformer	2011	17.14.1.1	18. Issue discussed was lack of information in procedures for handling K-593 (Fuel Gas Coalescer) used filters as pyrophoric material. Potential fire, equipment damage and/or personnel injury. Review EOM procedures and modify to include pyrophoric material safeguards.	Review EOM procedures and modify to include pyrophoric material safeguards.	Chapter 6 Equipment Description will be updated with a Cautionary Statement. Page 7 now includes the cautionary statement.	complete	Curry, David P.	5/9/2012	6/16/2012	6	S	Peterson, Paul M.	Completed
17345	D&R	#5 Rheniformer	2011	22.1.1.1	19. Team discussed potential overpressure of foul water piping from NHT V-430 and V-440 due to blocking PSV relief outet path to Relief KO drum if 4"" valve at V-599 is closed [D-312404]. Potential overpressure and release of hydrogen, fire, explosion, personnel exposure. Consider locking open and adding to car seal / locked valve list.	Consider adding valve to car seal / locked valve list.	Chain lock list will be updated to include this item. Due by 3/1/2012 List updated with PHA item as of 1/14/12	4/5&9 quarterly chain lock list #2 updated with this valve on it. System in place for Ops to verifiy valve is open and locked.	Peterson, Paul M.	5/2/2012	6/16/2012	6	S	Beatham, Keith	Completed

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17346	D&R	#5 Rheniformer	2011	22.1.2.1	20. Team discussed failure of V-599 Relief KO drum level transmitter 38LT093 [D-312404]. Potential V-599 overfill leading to liquid to the flare, potential flare line rupture due to 2-phase flow, possible release of HC & H2, fire, personnel injury. Consider a redundant level transmitter on V-599 with HiHi alarm on spare level gauge [D-312404]. (Note there is currently a separate project working on management of relief flow from V-430, see 5 NHT PHA for tracking, PHA Database Record #'s 17132 and 17133)	Review scenario to determine necessity of adding alarm, and add alarm if appropriate.	A review team met to review the #4 and #5 Rheniformer PHA recommendations involving alarms to align the recommendations with Chevron AOA targets and develop an action plan for each recommendation. The meeting took place on July 14, 2011 in the Refinery Conference Center, Room 3. Review Team: Stan Crowe, Ike Bullock, Paul Peterson Facilitators: Mark Crow & Cecily Storey Risk Reduction Plan Additional planned work was identified that will install additional level indication on V-599. Paul Peterson to document additional level indication to be installed on V-599 when information is available. Paul Peterson to review relief drum level alarm philosophy with operations management to ensure consistency. Paul Peterson to complete review and develop any additional follow-up plan by February 1, 2012. PMPE - MOC 23822 in place to a) modify alarm range per PED Relief study review and b) install a third level indication (GG, and 2 LT). Part (a) is complete and the overfill scenario of V-430 mitigation is also complete. The additional alarm capacity and V-430 mitigation adequately resolve this additional consideration. MOC 23822 will remain open until all PSI for the part (b) work is completed.	complete	Curry, David P.	5/9/2012	6/16/2012	7	S	Peterson, Paul M.	Completed

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							Mechanical completion is scheduled for 3Q12 with PSI updates in early 4Q12.								
17347	D&R	#5 Rheniformer	2011	22.1.6.1	21. Two 2" valves on relief lines near #5 Rhen plot limit 24" knife valve protecting plot limit piping (D-312389) tying into 24" flare header downstream of knife valve are not locked open. Potential overpressure of piping near plot limit, potential release of reformate or LPG, fire, explosion, personnel injury. Consider locking open and adding to car seal / locked valve list.	Consider adding valve to car seal / locked valve list.	Chain lock list will be updated to include this item. Due by 3/1/2012 List updated with PHA item as of 1/14/12	4/5&9 quarterly chain lock list #2 updated with this valve on it. System in place for Ops to verifiy valve is open and locked.	Peterson, Paul M.	5/2/2012	6/16/2012	7	S	Beatham, Keith	Completed
17348	D&R	#5 Rheniformer	2011	22.1.7.1	22. Team identified potential overpressure of naphtha piping with potential for fire and personnel injury. Verify locked open status on the 1" valve at V-599 (D-312404) on line from plot limit 5NHT naphtha feed PSV (C3-14) (D-312390) protecting plot limit piping (D-312389), if not consider locking open and adding to car seal / locked valve list. If valve is closed result is potential overpressure of naphtha piping near plot limit if PSV opens, potential release of naphtha, fire, personnel exposure.	Consider adding valve to car seal / locked valve list.	Chain lock list will be updated to include this item. Due by 3/1/2012 List updated with PHA item as of 1/14/12	4/5&9 quarterly chain lock list #2 updated with this valve on it. System in place for Ops to verifiy valve is open and locked.	Peterson, Paul M.	5/2/2012	6/16/2012	7	S	Beatham, Keith	Completed
17349	D&R	#5 Rheniformer	2011	22.1.8.1	23. Team identified that the locked open 24" knife valve from V-599 to flare is not on car seal / locked valve list. If closed potential overpressure of V-599, release of H2s and/or benzene containing HCs and/or H2 to atm, possible fire, explosion, personnel injury. Consider adding to car seal/locked valve list.	Consider adding valve to car seal / locked valve list.	Chain lock list will be updated to include this item. Due by 3/1/2012 List updated with PHA item as of 1/14/12	4/5&9 quarterly chain lock list #2 updated with this valve on it. System in place for Ops to verifiy valve is open and locked.	Peterson, Paul M.	5/2/2012	6/16/2012	7	S	Beatham, Keith	Completed

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Record #	ABU	Unit	I/R	Item Nbr	Additional Consideration (Recommendation)	ABU Proposal	Resolution	Verifier Comments	Verifier Name	Verified On	Due Date	RR	SOE	Assigned To	Status
17350	D&R	#5 Rheniformer	2011	22.1.9.1	24. The team identified deadleg on two-inch V-599 inlet line (4SLL100), LP condensate and 150# steam line at V-599 area (D-312404). Increased corrosion, possible LP condensate, steam or HC to ATM, fire, explosion, personnel injury. Consider either removing these lines from the plant, air-gapping the lines or ensuring that the lines are inspected at an appropriate frequency and update the P&ID as needed.	Operations and Inspections will review deadleg and determine appropriate course of action.	Add this deadleg to inspection list to identify/monitor possible localized corrosion. Projected completion 12/31/2011. Once this has been added to the inspection list, this PHA recommendation will be considered closed. Additional follow-up with this piping, if deemed appropriate, will depend on inspection results and will be managed through existing inspection and maintenance programs. Reassigned to Dave Dail on 9/26/11. 4/18/2012 Record Number 17350 24. The team identified dead leg on two-inch V-599 inlet line (4SLL100), LP condensate and 150# steam line at V-599 area (D-312404). Increased corrosion, possible LP condensate, steam or HC to ATM, fire, explosion, personnel injury Consider either removing these lines from the plant, air-gapping the lines or ensuring that the lines are inspected at an appropriate frequency and update the P&ID as needed. Add this dead leg to inspection list to identify/monitor possible localized corrosion. Projected completion 12/31/2011 Once this has been added to the inspection list, this PHA recommendation will be considered closed. Additional follow-up with this piping, if deemed appropriate, will depend on inspection results and will be managed through existing inspection and	CML points are active per meridium.	Peterson, Paul M.	4/20/2012	6/16/2012	6	S	Dail, David	Completed

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Record #	ABU	Unit	I/R	Item Nbr	Additional Consideration (Recommendation)	ABU Proposal	Resolution	Verifier Comments	Verifier Name	Verified On	Due Date	RR	SOE	Assigned To	Status
							maintenance programs. Reassigned to Dave Dail on 9/26/11 Operations and Inspections have reviewed dead leg and determine appropriate course of action. 1)0951-011-008 and 0952-006-001. These line is currently used by operations and valves may be closed to create a dead leg. Corrosion monitoring locations (CML) have been established to monitor for corrosion when valves are closed or open. 2)Corrosion monitoring locations (CML) have been established to acquire data to calculate corrosion rates at the stagnant end and the connection to the active end of this piping circuit. This piping circuit is inspected per API 570 Piping Inspection Code and Richmond Refinery Piping Inspection Guidelines. There are no corrosion issues at this time. Inspection Recommendation 3)Recommend to continued to monitor piping for corrosion on the OSI (On stream Inspection) program. CMLs Corrosion monitoring locations have been assigned where needed per API 570 Piping Inspection Code and Richmond Refinery Piping Inspection Guidelines. 4)Continued monitoring through the OSI program please close PHA record number 17350.							

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Record #	ABU	Unit	I/R	Item Nbr	Additional Consideration (Recommendation)	ABU Proposal	Resolution	Verifier Comments	Verifier Name	Verified On	Due Date	RR	SOE	Assigned To	Status
17351	D&R	#5 Rheniformer	2011	22.1.10.1	25. Abandoned old V-922 relief PSV 921 (C6-8) deadleg (D-312404). Potential increased corrosion, possible unknown hydrocarbon or H2 release to ATM, potential fire, explosion, personnel injury. Consider either removing this line and PSV from the plant, air-gapping the line or ensuring that the line is inspected at an appropriate frequency and update the P&ID as needed.	Operations and Inspections will review deadleg and determine appropriate course of action.	Add this deadleg to inspection list to identify/monitor possible localized corrosion. Projected completion 12/31/2011. Once this has been added to the inspection list, this PHA recommendation will be considered closed. Additional follow-up with this piping, if deemed appropriate, will depend on inspection results and will be managed through existing inspection and maintenance programs. Reassigned to Dave Dail on 9/26/11. 4/18/2012 Record Number 17351 3. Team discussed dead leg on hydrogen line [line 5P5129-6"; isometric drawing 0952-001-011; D-303315] upstream of 38FV041 when V-541 is not being regenerated. Presence of water & chlorides in the H2 could lead to increased corrosion, loss of hydrogen containment, fire, explosion and personnel injury. Review inspection frequency in light of regeneration frequency and consider increased inspection. Add this dead leg to inspection list to identify/monitor possible localized corrosion. Projected completion 12/31/2011. Once this has been added to the inspection list, this PHA recommendation will be considered closed. Additional follow-up with this piping, if deemed appropriate, will depend on inspection results and will be managed through existing inspection and	CML points are active	Peterson, Paul M.	4/20/2012	6/16/2012	6	S	Dail, David	Completed

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Record #	ABU	Unit	I/R	Item Nbr	Additional Consideration (Recommendation)	ABU Proposal	Resolution	Verifier Comments	Verifier Name	Verified On	Due Date	RR	SOE	Assigned To	Status
							maintenance programs. Reassigned to Dave Dail on 9/26/11. Operations and Inspections will review dead leg and determine appropriate course of action. Operations and Inspections have reviewed dead leg and determine appropriate course of action. 1)954-005-031 This line is currently used by operations and valves may be closed to create a dead leg. Corrosion monitoring locations (CML) have been established to monitor for corrosion when valves are closed or open. 2)Corrosion monitoring locations (CML) have been established to acquire data to calculate corrosion rates at the stagnant end and the connection to the active end of this piping circuit. This piping circuit is inspected per API 570 Piping Inspection Code and Richmond Refinery Piping Inspection Guidelines. There are no corrosion issues at this time. Inspection Recommendation 3)Recommend to continued to monitor piping for corrosion on the OSI (On stream Inspection) program. CMLs Corrosion monitoring locations have been assigned where needed per API 570 Piping Inspection Code and Richmond Refinery Piping Inspection Guidelines. 4)With the approval of Operations management for continued monitoring through the OSI program please close PHA record number 17351.								

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17352	D&R	#5 Rheniformer	2011	23.1.4.1	26. #5 Rheniformer Regeneration procedure has note stating: "If regen air is pulled or lost for any reason, stop PERC injection immediately. Otherwise permanent catalyst damage may occur." [page 14] Team discussed with SME that catalyst damage may not occur. Verify extent of catalyst damage and update Regeneration procedure if necessary. Non-Risk Ranked Actionable Item required to meet regulatory/statutory requirements and/or to be consistent with Chevron's guiding principles.	Verify extent of catalyst damage and update Regeneration procedure if necessary. Non-Risk Ranked Actionable Item required to meet regulatory/statutory requirements and/or to be consistent with Chevron's guiding principles.	Plan to revise Regen procedure prior to the April '12 5 Rhen Regen. 4 and 5 Rhen Regen procedures will be combined at the same time. Reassigned from Kimia Mondfrans to Eric Topham on 1/17/12 by Mark Crow. Confirmed with SME that no catalyst damange will occur from residual PERC when Regen air is lost or pulled. Procedure updated 6/13/13 to remove the statement on the note, "Otherwise permanent catalyst damage may occur" on Page 14 & 24. 5RHEN Procedure updated on 6/13/12. ETOP	Regen procedure is updated to clarify damage to cat.	Peterson, Paul M.	6/14/2012	6/16/2012			Topham, Eric	Completed

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Record #	ABU	Unit	I/R	Item Nbr	Additional Consideration (Recommendation)	ABU Proposal	Resolution	Verifier Comments	Verifier Name	Verified On	Due Date	RR	SOE	Assigned To	Status
17353	D&R	#5 Rheniformer	2011	23.1.6.1	27. Team discussed potential for HCl corrosion in the event of insufficient neutralization. Possible release of HC and/or H2, potential fire, explosion and personnel injury. Verify low pH alarm on 38AI042/3/4, if not consider adding a low pH alarm.	Review scenario to determine necessity of adding alarm, and add alarm if appropriate.	A review team met to review the #4 and #5 Rheniformer PHA recommendations involving alarms to align the recommendations with Chevron AOA targets and develop an action plan for each recommendation. The meeting took place on July 14, 2011 in the Refinery Conference Center, Room 3. Review Team: Stan Crowe, Ike Bullock, Paul Peterson Facilitators: Mark Crow & Cecily Storey Risk Reduction Plan Ike Bullock will verify if the low pH alarm already exists in the Regeneration alarm list. If not, the alarm will be added. Ike Bullock to provide feedback to Paul Peterson and any additional follow plan will be developed by February 1, 2012. PMPE - Requested control group to create an alarm for these points... 5/9/12 pH alarm in place for regens. PMPE 6/12/12	alarm in place	Curry, David P.	6/14/2012	6/16/2012	7	S	Peterson, Paul M.	Completed

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Record #	ABU	Unit	I/R	Item Nbr	Additional Consideration (Recommendation)	ABU Proposal	Resolution	Verifier Comments	Verifier Name	Verified On	Due Date	RR	SOE	Assigned To	Status
17354	D&R	#5 Rheniformer	2011	23.1.19.1	28. Team discussed potential for PERC to be left in lines following #5 Rheniformer catalyst Regeneration. Possible increased corrosion, release of PERC, hydrocarbons and/or hydrogen, potential fire, explosio n and personnel injury. Consider review of post-regeneration flushing procedure to maximize removal of PERC with respect to decreased regeneration frequency.	Operations and Inspections will review deadleg and determine appropriate course of action.	Add this deadleg to inspection list to identify/monitor possible localized corrosion. Projected completion 12/31/2011. Once this has been added to the inspection list, this portion of the PHA recommendation will be considered closed. Additional follow-up with this piping, if deemed appropriate, will depend on inspection results and will be managed through existing inspection and maintenance programs. Reassigned to Dave Dail on 9/26/11. Kimia Mondfrans will add to regen procedure the need to flush and drain. Projected due date 12/31/2011. Reference PHA Rec # 17309. Operations and Inspections reviewed dead leg and determine appropriate course of action. 1)0952-011-A01, 0952-011-A02, 0952-011-A03, and 0952-011-A04 Corrosion monitoring locations (CML) have been established to acquire data to calculate corrosion rates at the stagnant end and the connection to the active end of this piping circuit. This piping circuit is inspected per API 570 Piping Inspection Code and Richmond Refinery Piping Inspection Guidelines. Review of these piping circuits revealed No corrosion issues exist at this time. Inspection Recommends we continue to monitor these piping circuits on the on stream inspection	Regen procedure includes steps in Section VI Rejuv 4A and 4B to remove perc from regen system using vac truck and N2 purge. This, in addition to inspection practices, insures reliability and integrity of perc piping systems.	Peterson, Paul M.	6/1/2012	6/16/2012	6	S	Dail, David	Completed

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							program (OSI).								
17355	D&R	#5 Rheniformer	2011	23.1.20.1	29. Team discussed history of plugging of sulfide pump P-582 causing delay in sulfiding step during Regeneration. Possible delayed regeneration. Consider a PM of sulfide pumps P-3582 just prior to regeneration.	Declined. Not a safety issue. This asset item will be managed as a regular business item.					6/16/2012	7	A	Peterson, Paul M.	Declined
17356	D&R	#5 Rheniformer	2011	24.3.1.1	30. Team discussed ambiguities within #5 Rheniformer Regeneration procedure which may lead to personnel injury. Consider updating procedure with: 1) specific consequences of deviations in relation to loss of containment2) improved valve/line up identification to prevent loss of containment.	Consider updating procedure with: 1) specific consequences of deviations in relation to loss of containment 2) improved valve/line up identification to prevent loss of containment.	Plan to revise Regen procedure prior to the April '12 5 Rhen Regen. 4 and 5 Rhen Regen procedures will be combined at the same time. Reassigned from Kimia Mondfrans to Eric Topham on 1/17/12 by Mark Crow. The existing work processes such as MOC and EMMS procedure review can capture updates/clarifications over time. ETOP 6/5/12	Eric, Tom Bell, Adam Lovano and I reviewed the procedures independent of each other and could not find any specific changes we would make to address this concern. Since there was no specific mark associated with the A/C I approve completing the action item knowing that there are work processes (EMMS, MOC) that will ensure confusing statements will be corrected.	Peterson, Paul M.	6/11/2012	6/16/2012	6	S	Topham, Eric	Completed

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17357	D&R	#5 Rheniformer	2011	24.3.1.1	31. Team discussed ambiguities within #5 Rheniformer Regeneration procedure which may lead to personnel injury. After regeneration procedure is updated with clarifications concerning consequences of deviations, consider conducting procedural PHA.	After regeneration procedure is updated with clarifications concerning consequences of deviations, consider conducting procedural PHA.	Plan to revise Regen procedure prior to the April '12 5 Rhen Regen. 4 and 5 Rhen Regen procedures will be combined at the same time. Reassigned from Kimia Mondfrans to Eric Topham on 1/17/12 by Mark Crow. The existing work processes such as MOC and EMMS procedure review capture updates/clarifications over time. ETOP 6/5/12	Eric, Tom Bell, Adam Lovano and I reviewed the procedures independent of each other and could not find any specific changes we would make to address this concern. Since there was no specific mark associated with the A/C I approve completing the action item knowing that there are work processes (EMMS, MOC) that will ensure confusing statements will be corrected.	Peterson, Paul M.	6/11/2012	6/16/2012	6	S	Topham, Eric	Completed
17358	D&R	#5 Rheniformer	2011	24.14.1.1	32. Team discussed lack of guidance or procedure for #5 Rheniformer alarm testing and lack of tracking or routine duty for tracking alarm testing. Failure of safeguards as a result of alarm failure may result in loss of containment, fire, explosion and/or personnel injury. Consider assigning task to update #5 Rhen procedures for alarm testing. Consider adding routine duties to IntelaTrac or implement other system for tracking alarm testing.	Consider assigning task to update #5 Rhen procedures for alarm testing. Consider adding routine duties to IntelaTrac or implement other system for tracking alarm testing.	Routine duties for alarm testing is in place. Mid 2011 the update process for IntelaTrac was initiated to close this gap. The AC is considered complete with on going "evergreen" work processes (HO procedure mark ups and EMMS) to continually improve quality and accuracy of alarm test procedures.	complete	Curry, David P.	5/9/2012	6/16/2012	6	S	Peterson, Paul M.	Completed

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17359	D&R	#5 Rheniformer	2011	24.18.1.1	33. Hydrogen & nitrogen connections at K-550 discharge [D-303315] and at E-580 [D-312373] inlet on P&ID drawings are not correct. Update the P&IDs with the accurate information. Non-Risk Ranked Actionable Item required to meet regulatory/statutory requirements and/or to be consistent with Chevron's guiding principles.	Update the P&IDs with the accurate information. Non-Risk Ranked Actionable Item required to meet regulatory/statutory requirements and/or to be consistent with Chevron's guiding principles.	Drawings 303315 and 312373 are red lined in the PHA mark up data (at N2 and H2 connections). AC 17331 is the action plan for updating PID's and it is in progress. This AC will be closed out since 17331 is tracking the same correction to PIDs.	complete	Curry, David P.	5/9/2012	6/16/2012			Peterson, Paul M.	Completed
17360	D&R	#5 Rheniformer	2011	24.18.1.1	34. The team identified inconsistencies in the PSI for #5 Rheniformer pumps connected to the VOC system between the P&IDs [D-324614] and the EOM Process Description Chapter 4 (pgs 3 & 4). Update the PSI with the accurate information. Non-Risk Ranked Actionable Item required to meet regulatory/statutory requirements and/or to be consistent with Chevron's guiding principles.	Update the PSI with the accurate information. Non-Risk Ranked Actionable Item required to meet regulatory/statutory requirements and/or to be consistent with Chevron's guiding principles.	AC 17331 has a red line with the requested changes to PID's. EOM change request in place to remove P-556/A water pumps.	complete	Curry, David P.	5/9/2012	6/16/2012			Peterson, Paul M.	Completed
17361	D&R	#5 Rheniformer	2011	24.18.2.1	35. The team found inconsistency in DCS tags & alarm versus the P&ID [D-312386] for the identification of the draft pressure alarms for each furnace in #5 Rhen. P&ID references 38PI050/060/070/080, DCS & alarm table reference PC instead. Update the DCS tags to PI or update P&ID. Non-Risk Ranked Actionable Item required to meet regulatory/statutory requirements and/or to be consistent with Chevron's guiding principles.	Update the DCS tags to PI or update P&ID. Non-Risk Ranked Actionable Item required to meet regulatory/statutory requirements and/or to be consistent with Chevron's guiding principles.	P&ID is not correct. AC 17331 is to update PID's based on HAZOP team red lines. The PI's are flagged on the red line for changes. This AC is closed since the red line AC will include the updates.	complete	Curry, David P.	5/9/2012	6/16/2012			Peterson, Paul M.	Completed

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17362	D&R	#5 Rheniformer	2011	23.1.6.1	36. Team discussed potential for HCl corrosion in the event of insufficient neutralization. Possible release of HC and/or H2, potential fire, explosion and personnel injury. 50 foot span between Soda Ash injection point and mixer required replacement during the 2008 shutdown (due to corrosion). Consider moving existing mixer to Soda Ash injection point to improve mixing and decrease corrosion rates.	Consider moving existing mixer to Soda Ash injection point to improve mixing and decrease corrosion rates.	Based on the latest corrosion data the section of pipe between static mixer and caustic injection, PED recommends not proceeding with relocating the injection point or static mixer. ETC (Kevin Ganschow & Kyrolos El Giheny) reviewed the corrosion data and did not see a strong driver for relocation. The previous incident could have been unrelated to location. Piping is inspected after each regen to insure it remains above flag thickness. No further follow up is required because the hazard is mitigated by effectiveness of corrosion control is verified by piping inspection.	complete	Curry, David P.	5/9/2012	6/16/2012	7	S	Peterson, Paul M.	Completed

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Record #	ABU	Unit	I/R	Item Nbr	Additional Consideration (Recommendation)	ABU Proposal	Resolution	Verifier Comments	Verifier Name	Verified On	Due Date	RR	SOE	Assigned To	Status
17363	D&R	#5 Rheniformer	2011	24.14.2.1	37. Team discussed potential for HTHA damage in various equipment, with potential for release to ATM, fire, personnel injury. Consider adding CPVs to equipment susceptible to HTHA that do not currently have CPVs: E-593E-560B Channel	Consider adding CPVs to equipment susceptible to HTHA that do not currently have CPVs: E-593 E-560B Channel	Plan to create HTHA calculation, verify calculation with lead engineer, work with Tom Brikovitch to create a PI tag/calculation, submit a CPV addition form, D&R section head will approve form, and Adan McClain will implement in CPV system. Expected completion 1/15/12. Reassigned from Kimia Mondfrans to Eric Topham on 1/17/12 by Mark Crow. ETOP 6/12/12: CPV's already existed for: E-593: 5RHEN.E-593 (38TI913 - DRW5RHE-593 RX-MIX SHELL) E-560: 5RHEN.PIPE (38TI902 - DRC5RHE-593 PIPE RB-OUT) No CPV required for E-3570 since the maximum operating temperature of 1010F is below the 1050F HTHA Nelson Curve.	Assesment complete. CRV in place where needed.	Peterson, Paul M.	6/13/2012	6/16/2012	6	S	Topham, Eric	Completed
17364	D&R	#5 Rheniformer	2011	18.1.2.1	38. Team discussed potential closure of dampers on #5 Rheniformer furnaces, which can lead to furnace damage, compression explosion and personnel injury. Consider installation of min stops on #5 Rheniformer furnace dampers to align with furnace best practices.	Consider installation of min stops on #5 Rheniformer furnace dampers to align with furnace best practices.	Status 6/5/12 (RAIF) Alison Raiford: DED and the Furnace SME have determined that we are protected against 100% stack damper closure on the 5 CAT furnaces due to the presence of an annular gap. The calculated percentage is 7.5% which satisfies the best practice of 5-10%. This does not take into account the 2" gap between the damper blades so this calculation is very conservative. No furher followup necessary.	Furnace damper is good.	Peterson, Paul M.	6/13/2012	6/16/2012	6	S	Raiford, Alison L.	Completed

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Record #	ABU	Unit	I/R	Item Nbr	Additional Consideration (Recommendation)	ABU Proposal	Resolution	Verifier Comments	Verifier Name	Verified On	Due Date	RR	SOE	Assigned To	Status
17365	D&R	#5 Rheniformer	2011	24.19.1.1	39. Ensure that a piping specification break review is completed. Consider reviewing the piping specification breaks associated with #5 Rheniformer to ensure appropriateness for service. Correct P&IDs as needed. Make corrections in field as needed. Non-Risk Ranked Actionable Item required to meet regulatory/statutory requirements and/or to be consistent with Chevron's guiding principles.	Consider reviewing the piping specification breaks associated with #5 Rheniformer to ensure appropriateness for service. Correct P&IDs as needed. Make corrections in field as needed. Non-Risk Ranked Actionable Item required to meet regulatory/statutory requirements and/or to be consistent with Chevron's guiding principles.	Spec break review will be assigned to Engineering resources after the end of the year. Resources are currently tied-up the Major Shutdown execution and will be tied-up with SRU Shutdown EWO writing through the end of the year. Completion of the spec break review will be completed by the due date 6/16/12. Reassigned from Kurt Gish to Alison Raiford on 5/24/12 by Mark Crow. Status 6/5/12 MXEW Mark Crow per email from John Martin: 5CAT PHA spec break and misc. P&ID Updates are complete and attached to MOC 25072. I have signed off Design Stage 1, it is now waiting on Brad Elliott to move to Stage 2. Once signed off and drawings updated, this MOC closes out 5CAT PHA Item 17331 and PHA Item 17334 (PSV-091 set pressure). Item 17365 (spec break review) is complete with the exception of the regen air elbow, which requires a shutdown to fix. It can be closed out after the May 2013 5CAT shutdown. The following MOC's are associated with the 5CAT regen air elbow/PHA updates and should be recorded in the PHA database: MOC #25073: Temporary MOC to continue 5CAT operation (details mitigation plan for elbow agreed to at last week's meeting) MOC #25074: Permanent Shutdown MOC to update				8/31/2013			Raiford, Alison L.	Pending S/D

All Recommendations

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							drawings after May 2013 shutdown and completely close out PHA item 17365 MOC #25072: Drawing update MOC for P&ID updates identified during PHA (does not include the elbow) This action item will be resolved during the May 2013 5Cat shutdown. The due date has been set at 8/31/13 to allow for PSI to be updated following the shutdown. MOC 25072 (all changes except regen air to R-580) is complete PMPE 6/14/12.								
17356	D&R	#5 Rheniformer	2011	12.15.1.1	40. Team discussed potential V-590 overpressure during fire case and potential lack of open path to PRD on C-590 as V-590 elevation is less than 25' from grade. Per SME, this is a code compliance issue (ASME Section VIII M-5.8). [D-312374, D-312376] Consider locking open the 6" orbit and 6" block valve between V-590 and E-591; or review applicable procedures and modify, if necessary, to specify that "equipment isolated from its pressure relief path is depressured and free of liquids." Non-Risk Ranked Actionable Item required to meet regulatory/statutory requirements and/or to be consistent with Chevron's guiding principles.	Consider locking open the 6" orbit and 6" block valve between V-590 and E-591; or review applicable procedures and modify, if necessary, to specify that "equipment isolated from its pressure relief path is depressured and free of liquids." Non-Risk Ranked Actionable Item required to meet regulatory/statutory requirements and/or to be consistent with Chevron's guiding principles.	Item will be added to the 5 Cat chain lock valve list. Item is on chain lock list for 5 Cat.	complete	Curry, David P.	5/9/2012	6/16/2012			Peterson, Paul M.	Completed

Totals: 40 Records